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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,036	12/28/2001	Yoshiyuki Takizawa	1794-0146P	4262
2292	7590	06/15/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			PRITCHETT, JOSHUA L	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/029,036

Applicant(s)

TAKIZAWA ET AL.

Examiner

Joshua L Pritchett

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/03</u> . | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

This action is in response to Amendment filed March 19, 2004 and Request for Continued Examination filed April 21, 2004. Claims 1 and 2 have been amended as requested by the applicant.

#### ***Claim Objections***

Claim 7 is objected to because of the following informalities: claim 7 improperly depends from claims 1, 2, 5 and 6. Claims 5 and 6 are withdrawn from prosecution; therefore claim 7 must be amended to remove the dependency on claims 5 and 6. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Iketaki (US 5,022,064).

Regarding claim 1, Iketaki discloses a reflecting mirror (1) including a surface part having different regions of predetermined shapes (Figs. 4a-d), each region being formed on a multilayer film in a depth direction (Fig. 7), multilayer films a different regions having different periodic lengths (Fig. 7), the surface part reflecting light rays which are incident on the surface part (Figs. 4a-d) and a detector (11) to which the light rays reflected by the surface part are input and which detects spectrally the light rays thus input (Fig. 11). Fig. 7 shows that the thickness of the layers for the first wavelength for the first region ( $d_1$  and  $d_2$ ) are different than the thickness of the layers for the second wavelength for the second region ( $d_3$  and  $d_4$ ).

Regarding claim 2, Iketaki discloses the multilayer films of different regions of the surface part reflect light rays of different energies in a ranged extending from soft X-rays to extreme ultraviolet ray as well as have high reflection factors due to total reflection over a range extending from vacuum ultraviolet to visible light (Fig. 10a). Fig. 10a shows that the multilayer films are comprised of nickel and carbon, which according to the current application are capable of performing the claimed function.

Regarding claim 3, Iketaki discloses the surface part involves a circular shape and which has been divided into a plurality of sector shaped areas each having a predetermined central angle containing a central portion of the circular shape as its apex (Figs. 4 a-d).

Regarding claim 4, Iketaki discloses the surface part is composed of a plurality of sections each involving a predetermined number of the sector-shaped areas in which

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types of multilayer films formed therein are orders in alignment of the multilayer films coincide with each other in the plural sections (Figs. 4a-d).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7/1, 7/2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iketaki in view of Perryman (US 5,381,001).

Iketaki teaches the invention as claimed but lacks reference to the use of a super conducting tunnel junction detector. Perryman teaches the use of a super conducting tunnel junction detector (29) in a telescope (col. 17 lines 39-41). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Iketaki reference detector be a super conducting tunnel junction detector as taught by Perryman for the purpose of detecting quasi-particles.

### ***Response to Arguments***

Applicant's arguments, see Amendment, filed March 19, 2004, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings

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has been withdrawn because the claim limitations necessitating the objections have been removed.

Applicant's arguments, see Amendment, filed March 19, 2004, with respect to the rejection(s) of claim(s) 1-4 and 7-9 under Otani have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Iketaki.

The examiner states that the restriction/election requirement dated February 2003 was a restriction requirement.

### ***Conclusion***

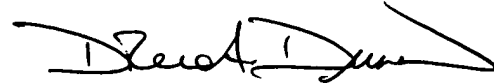
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *RP*

  
**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**